

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please amend claims as follows:

1. (currently amended) A diamond-coated silicon comprising:
a silicon substrate manufactured to having a thickness of from
0.1 to 500 µm or less where said silicon substrate is selected from
the group consisting of: single crystal silicon or polycrystal
silicon;
said silicon substrate is coated at least partially with
electrically conductive diamond to produce a diamond-coated
silicon;
where said diamond-coated silicon is flexible.

2. (currently amended) An electrode comprising:
an electrically conductive support substrate; and
a silicon substrate manufactured to a thickness of from 0.1 to
500 µm where said silicon substrate is selected from the group
consisting of: single crystal silicon or polycrystal silicon;

said silicon substrate is coated at least partially with electrically conductive diamond to form a diamond-coated silicon; and the diamond-coated silicon according to claim 1.

where at least one portion of the electrically conductive support substrate is bonded to said diamond-coated silicon.

3. (original) The electrode according to claim 2, where said silicon substrate is manufactured using a plate-like crystal growth process. wherein at least one portion of the electrically conductive support substrate is bonded to the diamond-coated silicon.

4. (cancelled) The electrode according to claim 2, wherein at least one surface of the electrically conductive support substrate is bonded to the diamond-coated silicon.

5. (currently amended) The electrode according to claim 2, wherein the electrically conductive support substrate is bonded to the diamond-coated silicon with an electrically conductive bonding material.

6. (currently amended) The electrode according to claim 3, where said electrically conductive support substrate is selected from the group consisting of: titanium, nickel, tantalum, copper, aluminum, indium, niobium, iron, graphite, stainless steel, carbon

steel, brass, Inconel, monel, Hastelloy, platinum, iridium, ruthenium, gold and silver plated on the above metals, carbon materials and alloys; carbon materials or alloys coated with an oxide of noble metals or noble metal mixtures by a sintering process. wherein the bonding is performed by welding or adhesion.

7. (cancelled) The electrode according to claim 4, wherein the electrically conductive support substrate is bonded to the diamond-coated silicon with an electrically conductive bonding material.

8. (cancelled) The electrode according to claim 4, wherein the bonding is performed by welding or adhesion.

9. (currently amended) The electrode according to claim 2 where a portion of a surface of said electrically conductive support substrate is bonded to said diamond-coated silicon and a portion of said surface is exposed electrically conductive support substrate and where exposed electrically conductive support substrate is covered with a corrosion-resistant plastic polymer. 5, wherein the bonding is performed by welding or adhesion.

10. (new) The electrode according to claim 9 where said corrosion-resistant plastic polymer is a fluorinated resin.

11. (new) The electrode according to claim 2 where a plurality of diamond-coated silicons are bonded to said surface of said electrically conductive support substrate to create a larger electrode.